UNITED STATES DISTRICT COURT
SOUTHERN DISTRICT OF TEXAS
CORPUS CHRISTI DIVISION

UNITED STATES OF AMERICA	§	
	§	
v.	§	**CR. NO. C-06-563**
	§	
CITGO PETROLEUM CORPORATION	§	
CITGO REFINING AND CHEMICALS	§	
COMPANY, L.P.	§	
PHILIP D. VRAZEL	§	

MEMORANDUM OPINION & ORDER

Pending before the Court is the Motion of the United States to Strike the Testimony of James

L. Montgomery From the Sentencing Hearing (Dkt. No. 643). Having considered the motion,

response, record, and the relevant law, the Court is of the opinion that the motion should be

DENIED.

Background

On May 12, 2008, Defendants CITGO Petroleum Corporation and CITGO Refining and

Chemicals Company (collectively "CITGO") offered the testimony of James Lester Montgomery.

Mr. Montgomery was offered as an expert witness in the field of air quality predictive modeling.

Mr. Montgomery testified that he is a chemical engineer working in the air quality area at

RPSJVC, Incorporated. In 1974, Mr. Montgomery graduated from Georgia Tech with a bachelor's

degree in chemical engineering. Immediately after graduation, Mr. Montgomery worked at DuPont

for one year. Mr. Montgomery then worked at the Texas Air Control Board for 13 years and

subsequently worked as a consultant for 17 years.

Mr. Montgomery testified that "[m]odeling is a tool that's used in the air pollution regulatory

and analysis field to estimate the impacts of pollutants on areas around the source or a group of

sources." Mr. Montgomery stated that the earliest work to develop the current models occurred in the 1950s and has since been refined. He further explained that modeling is accepted by government regulatory agencies and is frequently required when obtaining permits. According to Mr. Montgomery, modeling can accurately predict the impact of a known pollutant on a nearby area.

Mr. Montgomery testified that he employed modeling with the available evidence in this case. He began by discussing Corpus Christi wind data published by the TCEQ. Mr. Montgomery stated that approximately 20 percent of the time the wind blew from the direction of CITGO's tanks to the neighborhoods adjacent to the CITGO refinery. Next, Mr. Montgomery explained how dispersion is estimated and considered when modeling. He stated that as a pollutant goes further from a source, its concentration becomes smaller. Mr. Montgomery then testified that he used summa canister sampling results taken at the rims of tanks 116 and 117 for the modeling of emissions from those tanks. The summa canister samples were taken by TCEQ investigators. Mr. Montgomery then stated that there were "a couple of things wrong with only one measurement at the rim." He indicated that (1) there were no measurements upwind from the tanks; and (2) there were no measurements of the "maximum screen concentration," the concentration when the pollutant would reach the level of the ground. To compensate for these issues, Mr. Montgomery explained that he assumed that all of the detected emissions were coming from the tanks and also that he utilized a "worst case scenario" by assuming that the concentration at the lip of the tanks was the same at the ground. Mr. Montgomery stated that "I don't know if I would call [the method we utilized] completely standard. It's a very sensible and fairly straight forward way to do it."

Mr. Montgomery next explained the results of his modeling. He determined that for an emission rate of one pound per hour, a maximum impact of 104.9 micrograms per cubic meter would be realized. Montgomery then took the TCEQ sampling data, which was in micrograms per cubic

meter, and multiplied those figures by the ratio mentioned above to get the emissions rate for tanks 116 and 117. According to his calculations, tank 116 had an estimated emission rate of .141 pounds per hour of benzene, and tank 117 had an estimated emission rate of 1.508 pounds per hour of benzene. Mr. Montgomery then explained that he calculated the distance between the tanks and the residences of the alleged victims. He applied these figures to his modeling formula and determined the highest one hour exposure to benzene for each alleged victim based on five years of meteorological data. Mr. Montgomery also utilized his data to calculate estimated highest 24 hour exposure levels, annual exposure levels, and annual average exposure levels. Lastly, Montgomery explained that he utilized the same methodology to model the predicted emissions of all other chemicals found in the summa canisters at issue.

On cross examination, Mr. Montgomery testified that when developing his model he first developed an emission rate and subsequently ran a model to predict impacts. When asked if there is a standard procedure for obtaining the emission rate, Mr. Montgomery replied that there is none. He explained that he developed a method for calculating the emission rate specifically for the case at bar. Mr. Montgomery stated that he ran the "Screen3 model, which is the standard EPA model, to determine the relationship between emissions at the tank and downwind concentrations and then use[d] that to do a wors[t] case back calculation of what the emission rate was." When asked what the term "back calculation" meant, Mr. Montgomery replied by stating that "we assumed that the concentrations measured in the canister had actually occurred on the ground a couple of 100 meters downwind, which is where the model predicted the wors[t] case concentration was. So, we actually assumed that the canister concentration occurred downwind and we used the model to tell us what emission rate back at the tank could have accounted for that impact."

Next, Mr. Montgomery was questioned about the effect of wind flow on the emission rate.

Mr. Montgomery admitted that the Screen3 model considers wind speed as an element of its formula. Mr. Montgomery followed up by explaining that the method he used when employing Screen3 did not need specific wind speed data because he ran the model to find out what the maximum concentration would be under any meteorological conditions. However, Mr. Montgomery later admitted that if the wind conditions at the time of the sample were 10 to 20 miles per hour with gusts of up to 30 miles per hour, the sample concentration may have been lower than a hypothetical sample taken in different meteorological conditions.

When asked whether Mr. Montgomery would submit his calculations based on one summa canister to TCEQ to support a permit, he responded by stating that he might. He stated that if that was the best information he had, he would utilize it. Mr. Montgomery also stated that ideally he would have information about what was in the tanks in question over a period of time. Mr. Montgomery indicated that this forward calculation would be preferable in his business as a consultant. Furthermore, Mr. Montgomery stated that he had never submitted the type of calculation utilized in this case in support of a permit application. He indicated that modeling is not usually calculated from summa canisters, but instead is calculated from the materials that were in the tanks in question.

Mr. Montgomery further testified that under ideal conditions he would utilize an array of sampling to calculate the emissions rate for tanks 116 and 117. He indicated that a vertical and horizontal array of samples would be preferred.

Mr. Montgomery explained that he is familiar with an emission calculation model called Water9. According to his testimony, Water9 is used to estimate emissions from wastewater treatment tanks and wastewater treatment processes. Mr. Montgomery testified that he did not use Water9 in this case.

Legal Standard

Rule 702 states that "[i]f scientific, technical, or other specialized knowledge will assist the trier of fact to understand the evidence or to determine a fact in issue, a witness qualified as an expert by knowledge, skill, experience, training, or education, may testify thereto in the form of an opinion or otherwise, if (1) the testimony is based upon sufficient facts or data, (2) the testimony is the product of reliable principles and methods, and (3) the witness has applied the principles and methods reliably to the facts of the case." As a threshold matter, the trial judge must determine whether the proffered witness is qualified to give the expert opinion he seeks to express. *Kumho Tire Co. v. Carmichael*, 526 U.S. 137, 156 (1999); *Daubert v. Merrell Dow Pharms., Inc.*, 509 U.S. 579, 588 (1993). The burden is on the party offering the expert testimony to establish by a preponderance of the evidence that it is admissible. *Moore v. Ashland Chem., Inc.*, 151 F.3d 269, 276 (5th Cir. 1998) (en banc). A district court must make a "preliminary assessment of whether the reasoning or methodology underlying the testimony is scientifically valid [the reliability criterion] and of whether the reasoning or methodology can be applied to the facts at issue [the relevance analysis]." *Skidmore v. Precision Printing & Packaging, Inc.*, 188 F.3d 606, 617 (5th Cir. 1999) (quoting *Daubert*, 509 U.S. at 592–93). The district court's responsibility is "to make certain that an expert, whether basing testimony upon professional studies or personal experience, employs in the courtroom the same level of intellectual rigor that characterizes the practice of an expert in the relevant field." *Kumho Tire*, 526 U.S. at 152. The court "must ensure the expert uses reliable methods to reach his opinions; and those opinions must be relevant to the facts of the case." *Guy v. Crown Equip. Corp.*, 394 F.3d 320, 325 (5th Cir. 2004).

"[A]n expert is permitted wide latitude to offer opinions, including those that are not based on first hand knowledge or observation." *Daubert*, 509 U.S. at 592. The Fifth Circuit has stated that

when exercising discretion, "the district court may exclude expert testimony that lacks an adequate foundation." *Sales, Inc. v. E.I. du Pont de Nemours & Co.*, 24 F.3d 747, 752 (5th Cir. 1994). "[I]n determining the admissibility of expert testimony, the district court should approach its task 'with proper deference to the [factfinder's] role as the arbiter of disputes between conflicting opinions. As a general rule, questions relating to the bases and sources of an expert's opinion affect the weight to be assigned that opinion rather than its admissibility and should be left for the [factfinder's] consideration." *United States v. 14.38 Acres of Land, More or Less Sit. in Leflore County, Miss.*, 80 F.3d 1074, 1077 (5th Cir. 1996) (quoting *Viterbo v. Dow Chemical Co.*, 826 F.2d 420, 422 (5th Cir. 1987)).

Discussion

The Government presently argues that Mr. Mongomery's testimony involving emissions from tanks 116 and 117 should be stricken from the record. The Government maintains that Mr. Montgomery's "opinion testimony does not meet the minimal admissibility requirements of the Federal Rules of Evidence nor *Daubert* and its progeny." The Government claims that: (1) Mr. Montgomery's methodology has not been tested or subjected to peer review; (2) Mr. Montgomery did not determine the potential rate of error or follow any standards and controls; and (3) there is no evidence that Mr. Montgomery's methodology has been generally accepted in the scientific community. Specifically, the Government argues that (1) Mr. Montgomery used a wind speed of four miles per hour when the evidence was that the wind speed was ten to fifteen miles per hour with gusts of up to thirty miles per hour, and he therefore did not consider the actual wind conditions existing at the time of the TCEQ samples; and (2) Mr. Montgomery did not use standard methods when he "created a 'back calculating' model for the express purpose of this litigation even while admitting that 'forward calculation' was the preferred method."

The Court is not persuaded by the Government's arguments pertaining to wind speed. Although Mr. Montgomery acknowledged that his model utilized a wind speed value of one meter per second at the reference height of 10 meters, he explained that this value was determined by the model as a worst case scenario. Mr. Montgomery further explained that his model considered all wind speeds and selected the wind speed that would result in the highest concentration. Furthermore, even though a wind speed of 10 to 15 miles per hour with gusts of up to 30 miles per hour may have effected the concentration of the TCEQ summa canister sample, the Court finds that this affects the weight to be given to Mr. Montgomery's testimony and not its admissibility.
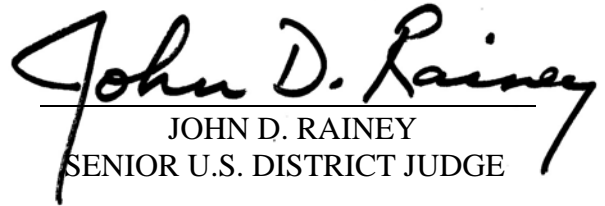
The Court is also not persuaded by the Government's arguments pertaining to back calculation. Although forward calculation may be preferable, it is clear that Mr. Montgomery utilized the only available data, namely the TCEQ summa canister samples, which required him to employ back calculation. Mr. Montgomery then took government accepted modeling formulas and adapted them to his limited data. Therefore, Mr. Montgomery took well accepted methodology and adjusted it for the circumstances of this case. Accordingly, the Court finds that Mr. Montgomery did use well accepted methods that meet minimum standards of reliability. To the extent that Mr. Montgomery's testimony deviates from modeling under ideal circumstances, the Court will consider this when determining the weight to be given to his testimony.

Conclusion

The Motion of the United States to Strike the Testimony of James L. Montgomery From the Sentencing Hearing (Dkt. No. 643) is hereby **DENIED**.

It is so **ORDERED.**

SIGNED on this 30th day of March, 2011.

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JOHN D. RAINEY
SENIOR U.S. DISTRICT JUDGE